

**B.Sc. MICROBIOLOGY
FIRST SEMESTER
FUNDAMENTALS OF MICROBIOLOGY
BMB-101
[USE OMR FOR OBJECTIVE PART]**

**SET
A**

Duration: 3 hrs.

Full Marks: 70

Time: 30 mins.

Marks: 20

(Objective)

Choose the correct answer from the following:

1 × 20 = 20

- Leeuwenhoek named motile unicellular life as:
a. Bacteria
b. Plankton
c. Animalcules
d. Spermatozoa
- Three domain system of Classification is based on:
a. Phenotypic characters
b. Genetic characters
c. Evolutionary relatedness
d. Both b and c
- "Swan-neck" experiment was done by:
a. Leeuwenhoek
b. Alexander Fleming
c. Robert Koch
d. Louis Pasteur
- Dual mode of nutrition is observed in:
a. Bacteria
b. Protista
c. Fungi
d. Archea
- Who is known as "Father of microbiology"?
a. Louis Pasteur
b. Alexander Fleming
c. Leeuwenhoek
d. Robert Koch
- Glycogen and fat is reserved food in:
a. Archaea
b. Bacteria
c. Protozoa
d. Fungi
- An example of an Evolutionary enigma is:
a. Diplomonas
b. Microsporidia
c. Trichomonads
d. Bacillus
- Viroids:
a. Do not have a protein coat
b. Have a protein coat
c. Capable of self-replication
d. Both a and c are correct
- Phase contrast microscopy is first described by:
a. Frits Zernike
b. Leeuwenhoek
c. Robert Hooke
d. Faber
- The principle of autoclave is/are:
a. Dry heat sterilisation
b. Moist heat sterilisation
c. Steam under pressure
d. Both b and c

11. In which technique mixed culture of bacteria is diluted directly in tubes containing melted agar medium at a temperature of 42-45°C?
 - a. Streak plate method
 - b. Spread plate method
 - c. Pour plate method
 - d. Serial dilution
12. An example of Ammensalism is:
 - a. *Buchnera aphidicola*
 - b. Bacteriocin nisin
 - c. Viruses
 - d. *Nitrosomonas*
13. Buttermilk like flavor in citrus juices is produced by:
 - a. *Lactobacilli*
 - b. *Colletotrichum*
 - c. *Serratia*
 - d. *Chromobacterium*
14. Cheese-holes are formed by:
 - a. *Clostridium*
 - b. *Leuconostoc*
 - c. *Cladosporium*
 - d. Both a and b
15. In which preservation technique microbes are preserved on liquid nitrogen?
 - a. Lyophilisation
 - b. Chilling
 - c. Paraffin method
 - d. Cryopreservation
16. RS ratio < 1 indicates:
 - a. No rhizosphere effect
 - b. Inhibition of activity in the rhizosphere
 - c. Selective stimulation
 - d. None of the above
17. Cold pack system is related to:
 - a. Pasteurization
 - b. Canning
 - c. Freezing
 - d. Chilling
18. Which is one of a primary source in food spoilage?
 - a. Air
 - b. Temperature
 - c. PH
 - d. Moisture content
19. Which is not an obligatory type of relationship?
 - a. Mutualism
 - b. Cooperation
 - c. Commensalism
 - d. Both b and c
20. Exciter filter present in:
 - a. Bright field microscope
 - b. Darkfield microscope
 - c. Phase contrast microscope
 - d. Fluorescent microscope

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(Descriptive)

Time : 2 hr. 30 mins.

Marks : 50

[Answer question no.1 & any four (4) from the rest]

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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 1. Describe briefly the major microbial interactions found in soil with suitable examples. | 10 |
| 2. Who proposed the Binomial system of classification? What are the five criteria of Binomial nomenclature? Discuss the rules of Binomial system of classification. Write a note on demerits of Binomial system of classification. | 1+2+4+3=10 |
| 3. a) Differentiate between Light microscope and Electron microscope.
b) Discuss the principle of Fluorescent microscopy with Schematic diagram. | 5+5=10 |
| 4. Define fixation. Discuss the major staining techniques used in microbiology. | 2+8=10 |
| 5. Write short notes on:
a) Spontaneous generation v/s biogenesis
b) Louis Pasteur | 5+5=10 |
| 6. Write short notes on:
a) Pour plate technique
b) Kingdom Fungi | 5+5=10 |
| 7. Describe briefly the physical method of sterilization in a laboratory. | 10 |
| 8. Write short notes on:
a) Sauerkraut
b) Microbial spoilage of canned foods. | 5+5=10 |

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